

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/005,880 09/905,666
	Filing Date	July 13, 2001
	First Named Inventor	Lorraine J. Gliver
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-106820US

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
NE	AA	5,512,463		Stemmer 435/91.2	04-30-1996	
	AB	5,514,588		Varadaraj 435/262	05-07-1996	
	AC	5,605,793		Stemmer 435/6	02-25-1997	
	AD	5,763,239		Short et al. 435/6	06-09-1998	
	AE	5,789,228		Lam et al. 435/209	08-04-1998	
	AF	5,811,238		Stemmer et al. 435/6	09-22-1998	
	AG	5,814,473		Warren et al. 435/15	09-29-1998	
	AH	5,824,469		Horwitz et al. 435/6	10-20-1998	
	AI	5,830,696		Short 435/69.1	11-03-1998	
	AJ	5,830,721		Stemmer et al. 435/489	11-03-1998	
	AK	5,834,252		Stemmer et al. 435/41.1	11-10-1998	
	AL	5,837,458		Minushull et al. 435/6	11-17-1998	435/6
	AM	5,866,363		Piecznik 435/69.1	02-02-1999	
	AN	5,876,997		Kretz 435/196	03-02-1999	
	AO	5,925,749		Mathur, et al. 536.23.1	07-20-1999	
	AP	5,928,905		Stemmer, et al. 435/91.1	07-27-1999	
	AQ	5,939,250		Short, Jay M. 435/4	08-17-1999	
	AR	5,939,300		Robertson, et al. 435/192	08-17-1999	
	AS	5,942,430		Robertson, et al. 435/197	08-24-1999	
	AT	5,948,666		Callen, et al. 435/194	09-07-1999	
	AU	5,958,672		Short, Jay M. 435/4	09-28-1999	
	AV	5,958,751		Murphy, et al. 435/208	09-28-1999	
	AW	5,962,258		Mathur, et al. 435/69.1	10-05-1999	
	AX	5,962,283		Warren et al. 435/128	10-05-1999	
	AY	5,965,408		Short, Jay M. 435/91.1	10-12-1999	
	AZ	5,985,646		Murphy, et al. 435/252.3	11-16-1999	
	BA	6,001,574		Short et al. 435/6	12-14-1999	
Examiner Signature	NEAed 9/10/04			Date Considered		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/005,885 09/905,666
	Filing Date	July 13, 2001
	First Named Inventor	L rrairie J. Gliv r
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-106820US

NE	BB	6,004,788		Short	435/183	12-21-1999	
NE	BC	6,030,779		Short	435/6	02-29-2000	
NE	BD	6,054,267		Short	435/6	04-25-2000	
NE	BE	6,057,103		Short	435/6	05-02-2000	
NE	BF	6,096,548		Stemmer	435/440	08-01-2000	
NE	BG	6,117,679		Stemmer	435/6	09-12-2000	435/440
NE	BH	6,132,970		Stemmer	435/6	10-17-2000	
NE	BI	6,165,793		Stemmer	435/440	12-26-2000	
NE	BJ	6,168,919		Short	435/6	01-02-2001	
NE	BK	6,171,820		Short	435/69.1	01-09-2001	
NE	BL	6,174,673		Short, et al.	435/6	01-16-2001	
NE	BM	6,180,406		Stemmer	435/440	01-30-2001	
NE	BN	6,238,884		Short et al.	435/69.1	05-29-2001	

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
NE	BO	WO	97/07205		Novo Nordisk A/S	02-27-1997		
NE	BP	WO	97/20078		Affymax Technologies	06-05-1997		
NE	BQ	WO	97/25410		Novo Nordisk A/S	07-17-1997		
NE	BR	WO	97/35957		Maxygen, Inc.	10-02-1997		
NE	BS	WO	97/35966		Maxygen, Inc.	10-02-1997		
NE	BT	WO	97/44361		Recombinant Biocatalysis Inc.	11-27-1997		
NE	BU	WO	97/48416		Recombinant Biocatalysis, Inc.	12-24-1997		
NE	BV	WO	97/48717		Recombinant Biocatalysis Inc	12-24-1997		
NE	BW	WO	97/48794		Recombinant Biocatalysis Inc	12-24-1997		
NE	BX	WO	98/00526		Recombinant	01-08-1998		
Examiner Signature		NE Red 9/30/04				Date Considered		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/006,660 09/905,666
	Filing Date	July 13, 2001
	First Named Inventor	L rrairie J. Gliver
	Group Art Unit	Unassign d
	Examiner Name	Unassigned
	Attorney Docket Number	02-106820US

					Biocatalysis Inc		
Ne	BY	WO	98/01581		Recombinant Biocatalysis Inc	01-15-1998	
Ne	BZ	WO	98/13485		Maxygen, Inc.	04-02-1998	
Ne	CA	WO	98/13487		Maxygen, Inc.	04-02-1998	
Ne	CB	WO	98/24799		Diversa Corp.	06-11-1998	
Ne	CC	WO	98/27230		Maxygen, Inc.	06-25-1998	
Ne	CD	WO	98/28416		Novo Nordisk A/S	07-02-1998	
Ne	CE	WO	98/31837		Maxygen, Inc.	07-23-1998	
Ne	CF	WO	98/36080		The Dow Chemical Company	08-20-1998	
Ne	CG	WO	98/41622		Novo Nordisk A/S	09-24-1998	
Ne	CH	WO	98/41623		Novo Nordisk A/S	09-24-1998	
Ne	CI	WO	98/41653		Novo Nordisk A/S	09-24-1998	
Ne	CJ	WO	98/42832		California Institute of Technology	10-01-1998	
Ne	CK	WO	98/48034		Diversa Corp.	10-29-1998	
Ne	CL	WO	98/58085		Diversa Corp.	12-23-1998	
Ne	CM	WO	99/07837		Diversa Corp.	02-19-1999	
Ne	CN	WO	99/08539		Diversa Corp.	02-25-1999	
Ne	CO	WO	99/10472		Diversa Corp.	03-04-1999	
Ne	CP	WO	99/10539		Diversa Corp.	03-04-1999	
Ne	CQ	WO	99/19518		Diversa Corp.	04-22-1999	
Ne	CR	EP	0911396A2		Maxygen, Inc.	04-28-1999	
Ne	CS	WO	99/21979		Maxygen, Inc.	05-06-1999	
Ne	CT	EP	0911396A3		Maxygen, Inc.	05-06-1999	
Ne	CU	WO	99/23107		Maxygen, Inc.	05-14-1999	
Ne	CV	WO	99/23236		Diversa Corp.	05-14-1999	
Ne	CW	WO	99/29902		California Institute of Technology et al.	06-17-1999	

Examiner Signature	<i>Ne</i> 9/30/04	Date Considered	
-----------------------	-------------------	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/905,660 09/905,666
	Filing Date	July 13, 2001
	First Named Inventor	L rrain J. Gliv r
	Group Art Unit	Unassign d
	Examiner Name	Unassigned
	Attorney Docket Number	02-106820US

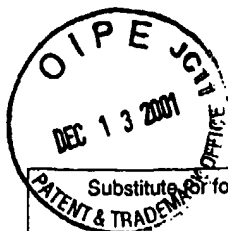
we	CX	EP	0934999A1		Maxygen, Inc.	08-11-1999		
we	CY	WO	99/41368		Maxygen, Inc.	08-19-1999		
we	CZ	WO	99/41369		Maxygen, Inc.	08-19-1999		
we	DA	WO	99/41383		Maxygen, Inc.	08-19-1999		
we	DB	WO	99/41402		Maxygen, Inc.	08-19-1999		
we	DC	WO	99/45154		Diversa Corp.	09-10-1999		
we	DD	WO	99/57128		Maxygen, Inc.	11-11-1999		
we	DE	WO	99/65927		Maxygen, Inc.	12-23-1999		
we	DF	WO	00/42560		Maxygen, Inc.	07-20-2000		
we	DG	WO	00/42561		Maxygen, Inc.	07-20-2000		
we	DH	WO	00/53744		Diversa Corporation	09-14-2000		
we	DI	WO	00/58517		Diversa Corporation	10-05-2000		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
we	DJ	Chang, C., et al. (1999) "Evolution of a cytokine using DNA family shuffling." <u>Nature Biotechnology</u> 17:793-797.	
we	DK	Christians, F.C. et al., (1999) "Directed evolution of thymidine kinase for AZT phosphorylation using DNA family shuffling." <u>Nature Biotechnology</u> 17:259-264.	
we	DL	Coco et al., (2001) "DNA shuffling method for generating highly recombined genes and evolved enzymes" <u>Nature Biotechnology</u> vol. 19 pp. 354-359	
we	DM	Crameri et al., (1993) "10(20)-Fold aptamer library amplification without gel purification," <u>Nuc. Acids Res.</u> 21(18):4410.	
we	DN	Crameri, A. & Stemmer W.P.C. (1995) "Combinatorial multiple cassette mutagenesis creates all the permutations of mutant and wildtype cassettes." <u>Biotechniques</u> 18:194-195.	
we	DO	Crameri, A. et al. (1996) "Improved green fluorescent protein by molecular evolution using DNA shuffling." <u>Nature Biotechnology</u> 14:315-319.	
we	DP	Crameri, A. et al. (1996) "Construction and evolution of antibody-phage libraries by DNA shuffling." <u>Nature Medicine</u> 2:100-103.	
we	DQ	Crameri, A. et al., (1997) "Molecular evolution of an arsenate detoxification pathway by DNA shuffling." <u>Nature Biotechnology</u> 15:436-438	

Examiner Signature	<i>N. Sheel</i> 9/30/04	Date Considered	
--------------------	-------------------------	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Substitute Form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/905,660 09/905,660
	Filing Date	July 13, 2001
	First Named Inventor	Lorrain J. Giv r
	Group Art Unit	Unassign d
	Examiner Name	Unassigned
	Attorney Docket Number	02-106820US

we	DR	Cramer, A. et al., (1998) "DNA shuffling of a family of genes from diverse species accelerates directed evolution." <u>Nature</u> 391:288-291.	
we	DS	Gates, C.M. et al., (1996) "Affinity selective isolation of ligands from peptide libraries through display on a lac repressor 'headpiece dimer'." <u>Journal of Molecular Biology</u> 255:373-386.	
we	DT	Minshull, J., Stemmer, W.P.C. (1999) "Protein evolution by molecular breeding." <u>Current Opinion in Chemical Biology</u> 3:284-290.	
we	DU	Ness, J. et al., (1999) "DNA shuffling of subgenomic sequences of subtilisin." <u>Nature Biotechnology</u> 17:893-896.	
we	DV	Patten, P.A. et al., (1997) "Application of DNA Shuffling to Pharmaceuticals and Vaccines." <u>Current Opinion in Biotechnology</u> 8:724-733.	
we	DW	Pelletier, Joelle N., (2001) "A Rachitt for our toolbox" <u>Nature Biotechnology</u> vol. 19, p. 314-315	
we	DX	Stemmer, W.P.C. (1994) "DNA Shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution." <u>PNAS</u> 91:10751	
we	DY	Stemmer, W.P.C. (1994) "Rapid evolution of a protein in vitro by DNA shuffling." <u>Nature</u> 370:389-391.	
we	DZ	Stemmer, W.P.C. (1995) "The Evolution of Molecular Computation." <u>Science</u> 270:1510	
we	EA	Stemmer, W.P.C. (1995) "Searching Sequence Space." <u>Bio/Technology</u> 13:549-553.	
we	EB	Stemmer, W.P.C. (1996) "Sexual PCR and Assembly PCR." In: <u>The Encyclopedia of Molecular Biology</u> . VCH Publishers, New York. pp. 447-457.	
we	EC	Stemmer, W.P.C. & Soong, N.W. (1999) "Molecular breeding of viruses for targeting and other clinical properties." <u>Tumor Targeting</u> 4:59-62.	
we	ED	Zhang, J. et al., (1997) "Directed evolution of an effective fucosidase from a galactosidase by DNA shuffling and screening." <u>Proceedings of the National Academy of Sciences, USA</u> 94:4504-4509.	

Examiner Signature	N. Street 9/30/04	Date Considered	
--------------------	-------------------	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(Modified) PTO/SB/08A-B (10-96)

Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/905,566
	Filing Date	July 13, 2001
	First Named Inventor	Lorraine J. Giver, et al.
	Group Art Unit	1652
	Examiner Name	Nashaat T. Nashed
	Attorney Docket Number	0184.310US

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			

FOREIGN PATENT DOCUMENTS							
Examiner Initials	Cite No.	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number				

[illegible]

Examiner Signature	<i>[Signature]</i> 9/10/64	Date Considered	
-----------------------	----------------------------	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.